

## CLAIMS

- 1. A semiconductor device comprising:**
  - a logic portion;
  - 5 a memory portion;
  - a detecting portion for detecting at least one of an operation frequency of the logic portion and an operation frequency of the memory portion;
  - a Vth control for supplying a Vth control signal to at least one of the logic portion and the memory portion depending on a detection result from the detecting portion; and
  - 10 an antenna,
  - wherein each of the logic portion and the memory portion comprises at least one transistor;
  - wherein the at least one transistor has a first gate electrode which is input with a logic signal and a second gate electrode which is input with the Vth control signal, and
  - 15 wherein at least the logic portion is provided with electric power from the antenna.
  
- 2. A semiconductor device comprising:**
  - 20 a logic portion;
  - a memory portion;
  - a detecting portion for detecting at least one of an operation frequency of the logic portion and an operation frequency of the memory portion;
  - a Vth control for supplying a Vth control signal to at least one of the logic portion and the memory portion depending on a detection result from the detecting portion; and
  - 25 an antenna,
  - wherein each of the logic portion and the memory portion comprises at least one transistor,
  - 30 wherein the at least one transistor has a first gate electrode which is input with a

logic signal, a second gate electrode which is input with the  $V_{th}$  control signal, and a semiconductor film,

wherein the semiconductor film is provided over the second gate electrode,

wherein the first gate electrode is provided over the semiconductor film, and

5 wherein at least the logic portion is provided with electric power from the antenna.

3. A semiconductor device according to any one of claims 1 and 2,

10 wherein the logic portion comprises more than one of a control circuit, an arithmetic circuit, an input/output circuit, a power source circuit, a clock generating circuit, a data demodulation/modulation circuit, and an interface circuit.

4. A semiconductor device according to any one of claims 1 and 2,

15 wherein the logic portion comprises a timing control, an instruction decoder, a register array, an address logic and buffer, a data bus interface, an ALU (Arithmetic Logic Unit), and an instruction register.

5. A semiconductor device according to any one of claims 1 and 2, wherein the memory portion comprises one or more of a DRAM, an SRAM, an FeRAM, a masked 20 ROM, a fuse PROM, an anti-fuse PROM, EPROM, an EEPROM, and a flash memory.

6. A semiconductor device according to any one of claims 1 and 2, wherein the detecting portion is a program or a storage medium storing the program.

25 7. A semiconductor device according to any one of claims 1 or 2, wherein the at least one transistor is provided over a substrate.

8. A semiconductor device according to any one of claims 1 and 2, wherein the at least one transistor and the antenna are provided over a substrate.

9. A semiconductor device according to any one of claims 1 and 2, further comprising a first substrate and a second substrate,  
wherein the at least one transistor is provided adjacent to the first substrate,  
wherein the antenna is provided adjacent to the second substrate, and  
5 wherein the first substrate and the second substrate are attached such that the at least one transistor and the antenna are electrically connected to each other.

10. A semiconductor device according to claim 7, wherein the substrate is one of a glass substrate and a flexible substrate.

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11. A semiconductor device according to claim 8, wherein the substrate is one of a glass substrate and a flexible substrate.

12. A semiconductor device according to claim 9, wherein each of the first and  
15 second substrates is one of a glass substrate and a flexible substrate.

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